

CORRECTED VERSION

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number  
WO 01/019393 A1

(51) International Patent Classification<sup>7</sup>: A61K 39/00,  
39/385, A01N 65/00, C07K 1/00, 14/00, C12N 15/00

(21) International Application Number: PCT/US00/24977

(22) International Filing Date:  
13 September 2000 (13.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/153,507 13 September 1999 (13.09.1999) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,  
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(48) Date of publication of this corrected version:  
26 September 2002

(15) Information about Correction:  
see PCT Gazette No. 39/2002 of 26 September 2002, Sec-  
tion II

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

too  
new



WO 01/019393 A1

(54) Title: DELIVERING TO EUCARYOTIC CELLS BACTERIAL PROTEINS THAT ARE SECRETED VIA TYPE III SECRE-  
TION SYSTEMS

(57) Abstract: The present invention relates to a method for delivering effector proteins into a target cell. This method involves introducing into the target cell an effector protein fused to a protein transduction domain of a human immunodeficiency virus TAT protein or derivatives or functional analogs thereof. The present invention also relates to a fusion protein including an effector protein fused to a protein transduction domain of a human immunodeficiency virus TAT protein or derivatives or functional analogs thereof. Another aspect of the present invention relates to a DNA construct including a first DNA molecule encoding an effector protein and a second DNA molecule operatively associated with the first DNA molecule and encoding a protein transduction domain of a human immunodeficiency virus TAT protein or derivatives or functional analogs thereof and its use in a method for delivering effector proteins into a target cell.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/24877**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : Please See Extra Sheet.

US CL : 424/192.1, 193.1, 197.11; 435/440; 530/350

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/192.1, 193.1, 197.11; 435/440; 530/350

Documentation searched other than minimum documentation to the extent that such documents are included in the fields  
~~searched~~  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
CAPLUS, MEDLINE, BIOSIS, SCISEARCH, WEST**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GALAN et al. Type III Secretion Machines: Bacterial Devices for Protein Delivery into Host Cells. Science. 21 May 1999, Vol. 284, pages 1322-1328, see entire document.	1-13
Y	ALFANO et al. The Type III (Hrp) Secretion Pathway of Plant Pathogenic Bacteria: Trafficking Harpins, Avr Proteins, and Death. Journal of Bacteriology. September 1997, Vol. 179, No. 18, pages 5655-5662, see entire document.	1-13
Y	SCHWARZE et al. In Vivo Protein Transduction: Delivery of a Biologically Active Protein into the Mouse. Science. 03 September 1999, Vol. 285, pages 1569-1572, see entire document.	1-13



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

18 DECEMBER 2000

Date of mailing of the international search report

16 JAN 2001

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
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**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US00/24977

**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FAWELL et al. Tat-Mediated Delivery of Heterologous Proteins into Cells. Proceedings of the National Academy of Sciences, U.S.A. January 1994, Vol. 91, pages 664-668, see entire document.	1-13

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